

Professional Audio Service Bulletin

Mincom
Division



Bulletin No. 19

MODIFYING M-79 FOR IMPROVED HIGH FREQUENCY RESPONSE AT 7½ IPS

PURPOSE: To preclude the necessity of readjusting bias when switching between 7½ ips and 15 ips.

NOTE: If machine is used at 30 ips or CCIR with these modifications, C-23 should be shorted with a jumper wire.

PARTS NEEDED PER TRACK:

K-A	1 ea.	Reed Relay - SPDT - 24-28V 83-1550-3620-1 or equivalent	\$38.00 Ea.
CR-A		1N4004 Diode 83-1530-0151	.35 Ea.
R-13		33K ¼ watt resistor 83-9520-2109-1	.45 Ea.
R-A		750 ohm ½ watt resistor 83-1520-7357-9	.35 Ea.
R-41A		200 ohm variable resistor 83-1520-1572 .750" x 1.750" perf brd or pc brd (see figure 2)	5.30 Ea.

PROCEDURE:

1. Remove Q-20, R-13, R-19, CR-9 and discard.
2. Remove any jumper connected to points E-10 through E-13.
3. Remove TP-2 (white) from board. Use care in not lifting pads from pc board (see figure 1).
4. R-41-A will be mounted in place of TP-2. Clip off rear lead of R-41-A. Drill a hole midway between and slightly above TP-2 mounting holes. This hole and forward most hole will be used to mount R-41-A (see figure 1).
5. Locate trace running from R-42 to wiper of R-41. Cut this trace about an inch from R-42.
6. Drill a hole behind bottom lead of C-14 (erase trimmer). Do not drill through any traces.

7. Locate same trace as in Step 5 and drill a hole into this trace between C-14 and Q-16 (see figure 1).
8. Mount relay K-A on a piece of perf board and mount the perf board to the mounting screws of Q-16 and Q-17 using two 6-32 nuts (see figures 1 and 2).
9. Install new R-13 (33K ohm).
10. Install CR-A into holes from which R-19 was removed.
11. Install R-A (750 ohm) between E-11 and E-12.
12. Connect a pair of wires to coil of relay K-A and route across top of board to terminals ~~E-11~~ and ~~E-12~~. Connect one wire to ~~E-11~~ and the other to ~~E-12~~. ¹² ¹³ ¹²
13. ¹³ Connect a wire from the wiper of K-A to R-42. Connect to the end of R-42 closest to the relay.
14. Connect a wire from the normally closed contact of K-A to trace going to wiper of R-41 through hole drilled in Step 7 above.
15. Install R-41-A in location vacated by TP-2 (a drop of selastic will hold it in place).
16. Connect a wire from the normally open contact of ^KR-A (through hole drilled in Step 6 above) to the wiper of R-41-A.
17. Connect a wire from front term of R-41-A to front term of R-41.
18. Fill in (with solder) the rear mounting hole of TP-2. This trace must not be broken.
19. Place signal brd on extender card and install in machine.
20. Place machine in record at low speed and monitor the wiper of R-41 with scope. A bias waveform should be visible.
21. Switch recorder to high speed (maintaining record mode); bias waveform should disappear. Switch scope to wiper of R-41-A; bias should be present.

NOTE: If bias is the reverse of Steps 20 and 21, the wires going to the normally open and normally closed contacts of K-A should be reversed.

22. Monitor TP-1 with VTVM (record mode) and adjust R-121 for 1.2V RMS (1 volt on 24 track).

NOTE: Before continuing with record alignment, reproduce alignment should be checked and adjusted if necessary.

23. To align bias the upper bias adjust R-41 is used for low speed and the lower R-41-A for high speed.
24. The bias must be adjusted (using appropriate pot) for 5db overbias at 15kHz for any speed (including 7½ ips).

Typical record response with above bias settings are:

7½ ips (-10VU input) flat to 15kHz -3VU 19kHz
15 ips (0VU input) flat to 20kHz -3VU 24kHz
30 ips (0VU input) flat to 20kHz -3VU 24kHz

JDC:lj

FIGURE 1

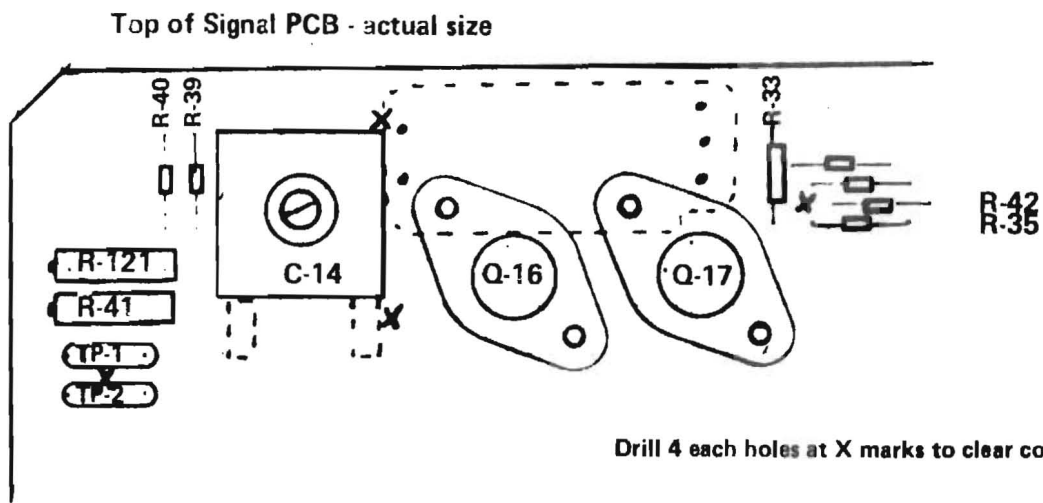


FIGURE 2

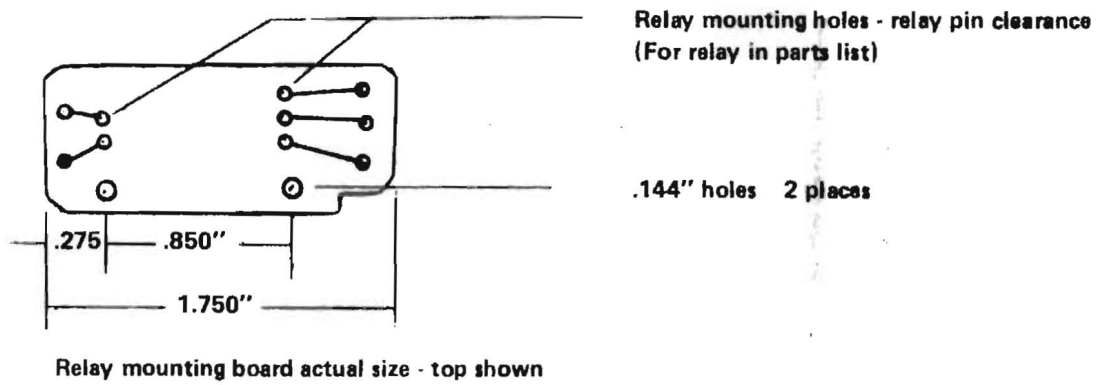
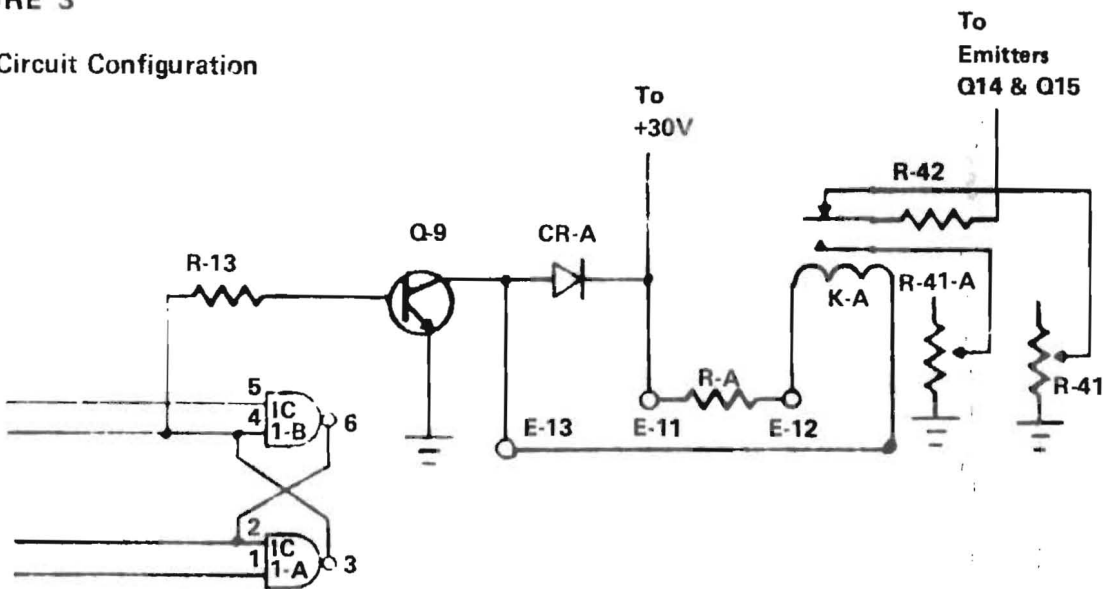


FIGURE 3

New Circuit Configuration



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R-41A		200 ohm variable resistor 83-1520-1572 .750" x 1.750" perf brd or pc brd (see figure 2)	5.30 Ea.

PROCEDURE:

1. Remove Q-20, R-13, R-19, CR-9 and discard.
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7. Locate same trace as in Step 5 and drill a hole into this trace between C-14 and Q-16 (see figure 1).
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NOTE: If bias is the reverse of Steps 20 and 21, the wires going to the normally open and normally closed contacts of K-A should be reversed.

22. Monitor TP-1 with VTVM (record mode) and adjust R-121 for 2.4V RMS (2 volt on 24 track).

NOTE: Before continuing with record alignment, reproduce alignment should be checked and adjusted if necessary.

23. To align bias the upper bias adjust R-41 is used for low speed and the lower R-41-A for high speed.
24. The bias must be adjusted (using appropriate pot) for 5db overbias at 15kHz for any speed (including 7½ ips).

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FIGURE 1

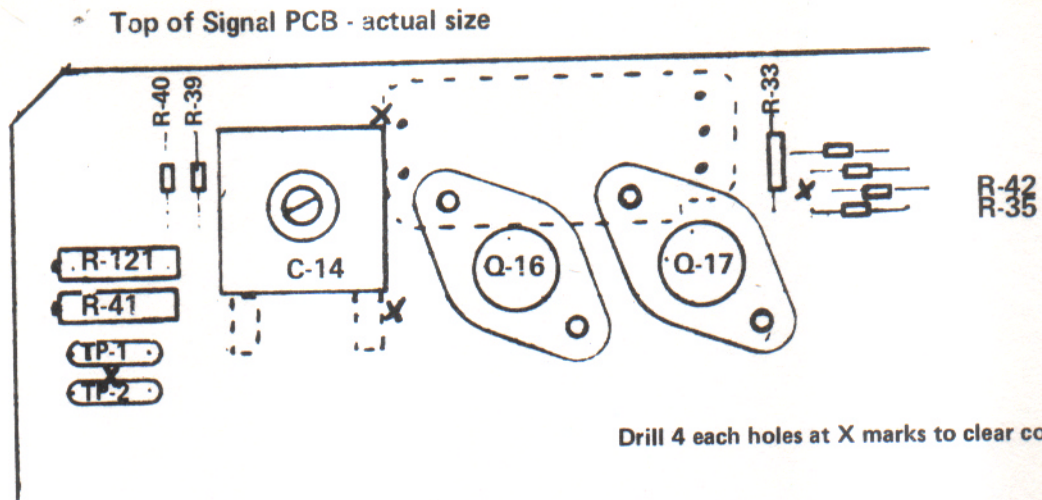


FIGURE 2

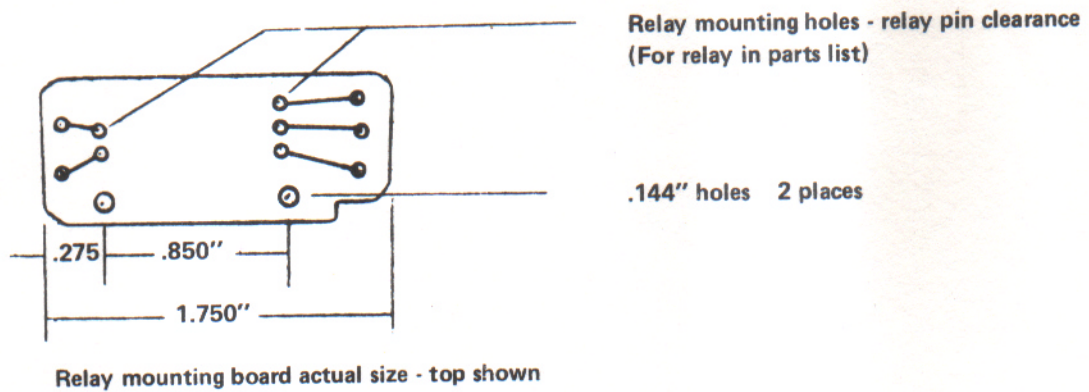


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